

CHARGE NUMBER: 1806

PROJECT TITLE: New Tobacco Processes

PROJECT LEADER: S. R. Wagoner

PERIOD COVERED: September, 1985

## I. WHOLE LEAF CUTTING

### A. Objective

Develop a process for cutting and separating whole leaf into cigarette filler.

### B. Status

In the evaluation to determine the maximum filler length available by hand stemming whole cut leaf filler at the cutter exit, cigarette results showed no advantage for the whole cut leaf filler compared to a strip control. Even though the test filler was longer (>6 mesh = 7.8 vs 4.6%) exit the maker garniture, loose ends results indicated that the test cigarettes produced slightly higher fallout than the control cigarettes (0.61 vs 0.47 g/50 cigt). The compacimetric firmness results were atypical as the plotted lines of firmness vs density intersected at 0.242 g/cc with a firmness of 41.6 mm\*10. At higher densities, the test cigarettes were less firm relative to the control. Due to this, the cigarette analyses will be retested.

Three batches of whole cut leaf, immediately exit the cutter, were superheated in the 8" tower to aid in the subsequent stem separation in the VT separator. Product yield (85%) and lamina recovery (97%) were higher than in normal processing. However, probably due to the loss in moisture through the tower, sieve analyses showed the VT product to be somewhat shorter than normal (>6 mesh = 54 vs 62%).

### C. Plans

Complete the cigarette comparison (firmness, loose ends, ripped CV/OV) evaluating whole cut leaf filler produced by the D&F feeder with the pneumatic stripper.

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## II. STEM TREATMENT

### A. Objective

To develop methods of improving the fibrillation and subjective character of bright and burley stems.

B. Status

To modify the subjective character, several sets of tests were conducted treating washed shredded bright stems with cellulase enzymes. Variations in testing included the type of cellulase, treatment time, and the addition of oriental tobacco after treatment. Preliminary subjective screening indicated that different cellulase enzymes did produce differing responses.

C. Plans

With the aid of Biochemical Research, conduct a study to characterize the enzyme solution that has been producing the most positive results.

III. MECHANISM STUDIES

A. Objective

To determine the mechanisms that are important to the processing of tobacco, such as attrition, drying, fluidization, etc.

B. Status

Testing was conducted in the 5' batch cylinder examining the effect of flight configuration and rpm on filler cascade formation. Visual observation indicated that, at a constant rpm, twelve flights angled downward from the wall produced the most uniform cascade. In general, increasing the rpm from 13 to 19 only increased the trajectory and turbulence of the filler. PM USA Engineering will use this information as a baseline for after-cut flavor application improvement at Cabarrus.

To determine whether the way in which burley spray is prepared has an effect on subjective and/or processing characteristics, a study was undertaken to identify any differences among the processing locations. Several differences, including storage temperature, processing equipment, and order of component addition were found at the MC, Stockton Street, Louisville, and Cabarrus.

C. Plans

Conduct a test to determine whether the burley spray preparation techniques are producing flavors with differing subjective responses.

/dbb

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